

# Effectiveness of Multimedia Learning in Higher Education

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**Abstract-**The paper highlights the efficiency of multimedia technology in higher education. By the Impact of ICT (Information & Communication Technologies) can help the students, researchers and academicians to access the full text from the electronic sources. Today the e-publishing and e-learning modules or resources carry out the higher educational functions efficiently and effectively. So the modern higher education system has changed the way of learning with the help of Multimedia technologies. So the authors find the perceived importance and its satisfactory level towards the Multimedia learning in the higher education.

**Keywords-** ICT, E-Learning; E-Publishing; Learning Trend & Design; Higher Education; Multimedia

## I. INTRODUCTION

Internet has gained popularity in finding any kind of information on any branch of knowledge. The information technology sector has slowly taken advantage of this shift from a paper-based source to electronic media due to the rapid and strong impact of Information Communication Technologies (ICT) available to create host and access full text electronic information resources.

The e-publishing and e-learning modules or resources carry out the higher educational functions efficiently and effectively (Dali, 2008). A number of tools and techniques were developed since, earlier, technology use to collected non-books materials such as video cassettes, audio cassettes, micro card, micro film and micro fitch etc(Rarnaiah, 1998) and call them multimedia collection, however,each one of these forms of documents needed special equipment in order to use them. There was no single platform on which all these forms of information could be stored for retrieval.

During 1980's computer spellings succeeded by integrating text, graphics, animation audio and video information on a computer after converting then inter digital format called multimedia. Multimedia was mainly used by publishing industry which influences both teachers and users (Vila, 2008).

It is hard to imagine a place that will be more affected by the rise of the e-learning through multimedia in the classroom (Williams, 2009). The way in which faculty, research scholars and students learn and the method of teaching will change completely over the next few years (Westwood, 2008).

(Encyclopedia Britannica, 2006): The first innovation of publishing and learning revolutionary was started from 888 (A.D) Block Printing, 1041(A.D) Invented movable clay type, 1423 (A.D) Xylography , 1436 (A.D) Printing press, 1440 (A.D) Movable metal type, 1450(A.D) First are 40 lines per page, 1455 (A.D) First block-printed Bible ,1457 (A.D) first known color printing by Faust, 1461 (A.D) Printed the first illustrated book, 1476 (A.D) First use of copper engravings instead of woodcuts for illustration and 1884 (A.D) Typewriter (Ament, 1997-2007) were introduced in the commercial market which had on everlasting impact on publishing.

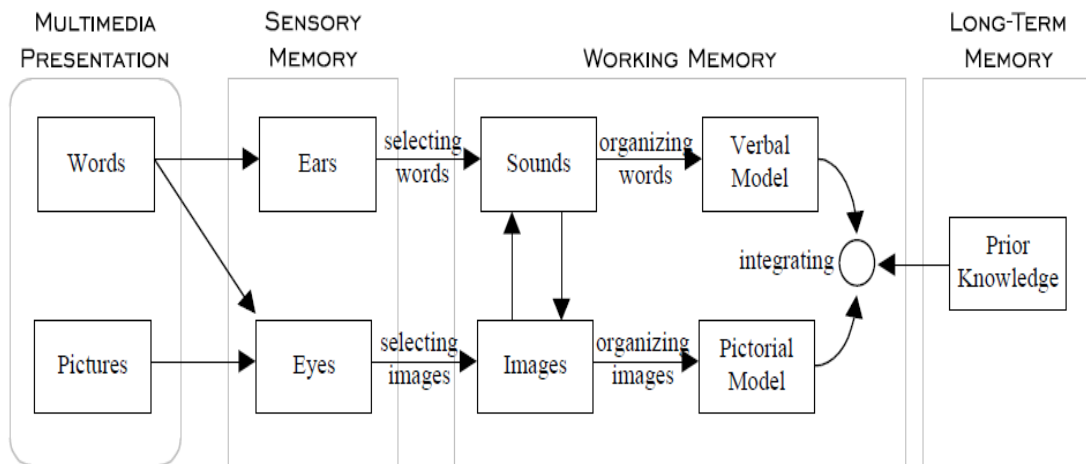
Invention of printing technology in second half of the 15<sup>th</sup> century started a revolution of in spreading thoughts and scholarships. Later on microfilm (1839), Sound Recording discs (1877), Audio Tapes (1899), Video Tape and Television (1908), Micro Computers (1980), CD-ROM (1985), Optical Storage Device (1985) (Schreiner, 2008) and DVD (1997-98) etc. were introduced in the commercial market which had on everlasting impact on publishing (Pratap Singh, 2004).

## II. REVIEW OF LITERATURE

Multimedia publishing and learning is one of the important information technologies in the 21st century. Multimedia publishing and learning is a new technology in the education sector which combines words and number with images and sounds to create more comprehensive and effective communication between computers and their users (Sakamoto, 1991). It is not a new technology but it offers a new and exciting way of using computer technology. There are rapid developments in data processing in the 1970's. The thrust was on text processing in the 1980's and now the emphasis is on image processing. The development in image processing led to the emergence of multimedia technology is capable of recording in a computer system where it can be manipulated and recombined (Merwe, 1993).

The term multimedia is formed by the combination of two words multi and media, multi refers many, i.e. at least two medium can be referred to storage, transmission communication representation, presentation, input interaction and perception meaning that it can refer to different levels of abstraction. It also refers to basic information like text, graphic, image, video and audio (Kumaresan, 2002).

Mayer bases his *cognitive theory of multimedia learning* on the following model.



Information Communication Technology (ICT) has become a vital component of the educational process and is giving educators new tools to transform learning and teaching. Multimedia learning ensures effective use of technology and compliance with users requirements; a coordinated plan must be developed that defines a common vision for the role of technology in instructional programs and operations. The gist of the above deliberation is to highlight the multimedia as a new platform for learning (Meleisea, 2005).

#### A. Objectives

- 1) To bring out the opinion and suggestions of students, faculty members and research scholars on the quality education and assisting to future.
- 2) To be made available in online databases for efficient access by learners by using international standards.
- 3) To identify the perceived importance of satisfaction factors and the issues causing dissatisfaction.
- 4) To identify the satisfaction factors of students, faculty members and research scholars by comparing the response.

#### B. Methodology

A survey, about e-learning through multimedia technology in the higher education system in fact about 225 questionnaires were distributed to students, research scholars and faculty of management institutes in Bangalore..

#### C. Hypotheses of the Study

The following hypotheses are established for the study

Hypothesis 1: There is no association between source and print usage.

Hypothesis 2: There is no association between source and non-print usage

### III. ROLE OF MULTIMEDIA IN HIGHER EDUCATION SYSTEM

Multimedia learning technology has opened a new era for the learners and teachers in higher education system and the main advantages of electronic or digital format is flexibility in combining transmitting and manipulate customized in the elements of multimedia according to the user needs.

Components of multimedia are text, data, graphics, image, sound view or animation and these are integrated into one accessible interactive links.

Interactive nature is an integrated part of multimedia. Interactive links make it possible for the users to point out with a mouse and click on certain objects such as a button highlighted text. This interact the programme to respond in certain way.

This model is activated through five steps: “(a) selecting relevant words for processing in verbal working memory, (b) selecting relevant images for processing in visual working memory, (c) organization selected words into a verbal mental model, (d) organizing selected images into a visual mental model, and (e) integrating verbal and visual representations as well as prior knowledge” (Mayer, 2001).

#### Data Analysis and interpretation:

In order to know the effectiveness of Multimedia learning in higher education system, 225 questionnaires were distributed to students, research scholars and faculty of management institutes in Bangalore, out of which 210 questionnaires have been received with a response rate of 93.33%.

The study indicates that from the above table, among the various library sources (30.1%) respondents expressed their opinion as little extent of use information publishing and learning through print, (26.4%) some extent, (24.4%) considerable extent and (19.1%) great extent. The chi square applied for this table divided in to two that is one source and print usage. Table 2

TableI EXTENT OF USE INFORMATION PRINT PUBLICATION AND LEARNING

Name of sources	Great extent	Considerable Extent	Some extent	Little extent	Total
Dictionaries	19	50	79	62	210
Encyclopedias	28	100	39	43	210
Year Books/Directories	25	85	62	38	210
Biographic Sources	33	22	30	125	210
Gazetteers/Maps/Atlas	29	67	20	94	210
Bibliographic	42	49	41	78	210
Hand Books	14	105	25	66	210
Text Books	20	60	68	62	210
Subject Books	29	58	74	49	210
General Books	50	50	46	64	210
Fictions/Stories Books	20	50	35	105	210
Theses &Dissertation	13	14	89	94	210
Data Books	44	50	71	45	210
Patents	100	58	17	35	210
Current journals	7	20	94	89	210
Back Volumes of Journal	56	79	46	29	210
Newspapers	22	56	97	35	210
Old Question Papers	61	18	99	32	210
Popular Magazines	45	55	50	60	210
Microfilms	100	26	25	59	210
Microfiche	98	20	24	68	210
Audio/Video Discs	28	38	92	52	210
Grand Total	883 19.1%	1130 24.4%	1223 26.4%	1384 30.1%	4620 100.0%

TableII

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	1182.541(a)	63	.000
<b>Likelihood Ratio</b>	1151.996	63	.000
<b>Linear-by-Linear Association</b>	17.496	1	.000
<b>N of Valid Cases</b>	4630		

TableIII EXTENT OF USE INFORMATION E-PUBLICATION AND E-LEARNING:

Name of sources	Great extent	Considerable Extent	Some extent	Little extent	Total
Dictionaries	62	79	50	19	210
Encyclopedias	43	39	100	28	210
Year Books/Directories	38	62	85	25	210
Biographic Sources	125	30	22	33	210
Gazetteers/Maps/Atlas	94	20	67	29	210
Bibliographic	78	41	49	42	210
Hand Books	66	25	105	14	210
Text Books	62	68	60	20	210
Subject Books	49	74	58	29	210
General Books	64	46	50	50	210
Fictions/Stories Books	105	35	50	20	210
Theses &Dissertation	94	89	14	13	210
Data Books	45	71	50	44	210
Patents	35	17	58	100	210
Current journals	89	94	20	7	210
Back Volumes of Journal	29	46	79	56	210
Newspapers	35	97	56	22	210
Old Question Papers	32	99	18	61	210
Popular Magazines	59	109	40	2	210
Microfilms	59	25	26	100	210
Microfiche	68	24	20	98	210
Audio/Video Discs	60	92	38	20	210
Grand Total	1391 30.1%	1282 27.7%	1115 24.1%	832 18.0%	4620 100.0%

TableIV

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	1286.882(a)	63	.000
<b>Likelihood Ratio</b>	1260.577	63	.000
<b>Linear-by-Linear Association</b>	6.949	1	.008
<b>N of Valid Cases</b>	4620		

Since the calculated value of  $\chi^2$  is lesser than the probability value of 0.05, hypothesis is rejected. Therefore

we conclude that there is association between the source and print usage.

The study indicates that from the above table, among the various library sources (30.1%) respondents expressed their opinion as great extent of use of information e-publishing and e-learning through multimedia technology, (27.7%) considerable extent, (24.1%) some extent and (18.0%) little extent. The chi square applied for this table divided into two that is one source and non print usage in Table 4

Since the calculated value of  $\chi^2$  is lesser than the probability value of 0.05, hypothesis is rejected. Therefore we conclude that there is association between the source and non-print usage.

#### IV. SUMMARY OF FINDINGS

An attempt has been made to give summary of the data analysis based on the research data collected from the faculty, research scholars and students of management institutes of Bangalore. The significant finding of the research study pertaining to "E-Learning and E-Publishing through Multimedia Technology states that these facilities are more efficient and effective in Higher Education System: A Study" has been reported under characteristics of population, use of e-resources, use of e-publication and use of e-learning.

1. The study populations are covered majority-using students (66.67%) followed by faculty (23.80%) and research scholar (9.53%)

2. The study indicates that the various library sources (30.1%) respondents expressed their opinion as little extent of use of information publishing and learning through print, (26.4%) some extent, (24.4%) considerable extent and (19.1%) great extent.

3. The study indicates that the various library sources (30.1%) respondents expressed their opinion as great extent of use of information e-publishing and e-learning through multimedia technology, (27.7%) considerable extent, (24.1%) some extent and (18.0%) little extent.

#### V. CONCLUSION

The incorporation of multimedia in publishing and learning tools provides added advantages to learners and trainees. Although the effort in developing the technology has not been matched by a similar concern with the pedagogy, the discussion in this paper clearly shows that multimedia technology has great potential to assist learning as well as to enhanced learner visualization and understanding of concepts in technical way

At some point in recent history, word got around that education without entertainment was worthless. But isn't it actually compelling content that engages users? And if this is the case, can't a text-only delivery mode provide the best solution? With all of the delivery modes available, the most important component in producing an effective learning experience continues to be in the quality of the instructional design and content, not the media itself. A well-organized and

skillfully written course offers learners accessibility and adaptability not available by other mediums.

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